

CLAIMS:

1. A system for resonantly driving a power toothbrush having a resonant frequency, wherein a brushhead portion of the toothbrush moves in operation through a path with an amplitude about a center point, comprising:
a resonant drive system for driving a brushhead at a drive frequency, the drive system including a circuit for changing the drive frequency relative to the center frequency to produce a periodic change of amplitude of the brushhead portion within the range of 5-30%, providing an improved sensory experience without discomfort to the user.
2. The system of claim 1, wherein the change of amplitude is less than 20%.
3. The system of claim 1, wherein the center frequency is different from the resonant frequency of the toothbrush within a range of 0 to 5 Hz.
4. The system of claim 3, wherein the changing of the drive frequency is accomplished by frequency modulation.
5. The system of claim 4, wherein the difference between the center frequency and the resonant frequency is approximately ± 3 Hz.
6. A system of claim 1, wherein the driving frequency has a frequency deviation with a range of 1-14 Hz from the center frequency.
7. The system of claim 6, wherein the frequency deviation is approximately 3.5 Hz.
8. The system of claim 1, wherein the driving frequency change has a modulation frequency within the range of 3-40 Hz.
9. The system of claim 8, wherein the modulation frequency is approximately 12 Hz.
10. The system of claim 4, wherein the change of the drive frequency is in the form of a triangular wave.
11. The system of claim 1, wherein the change of drive frequency has a duty factor of approximately 48%.
12. The system of claim 1, wherein the drive system includes two driving signal sources, one signal source being at approximately the resonant frequency and the other signal source being at a frequency which is slightly different than the resonant frequency.
13. The system of claim 12, wherein the frequency of the second signal source is different than the frequency of the first source within a range of 5 to 30 Hz.